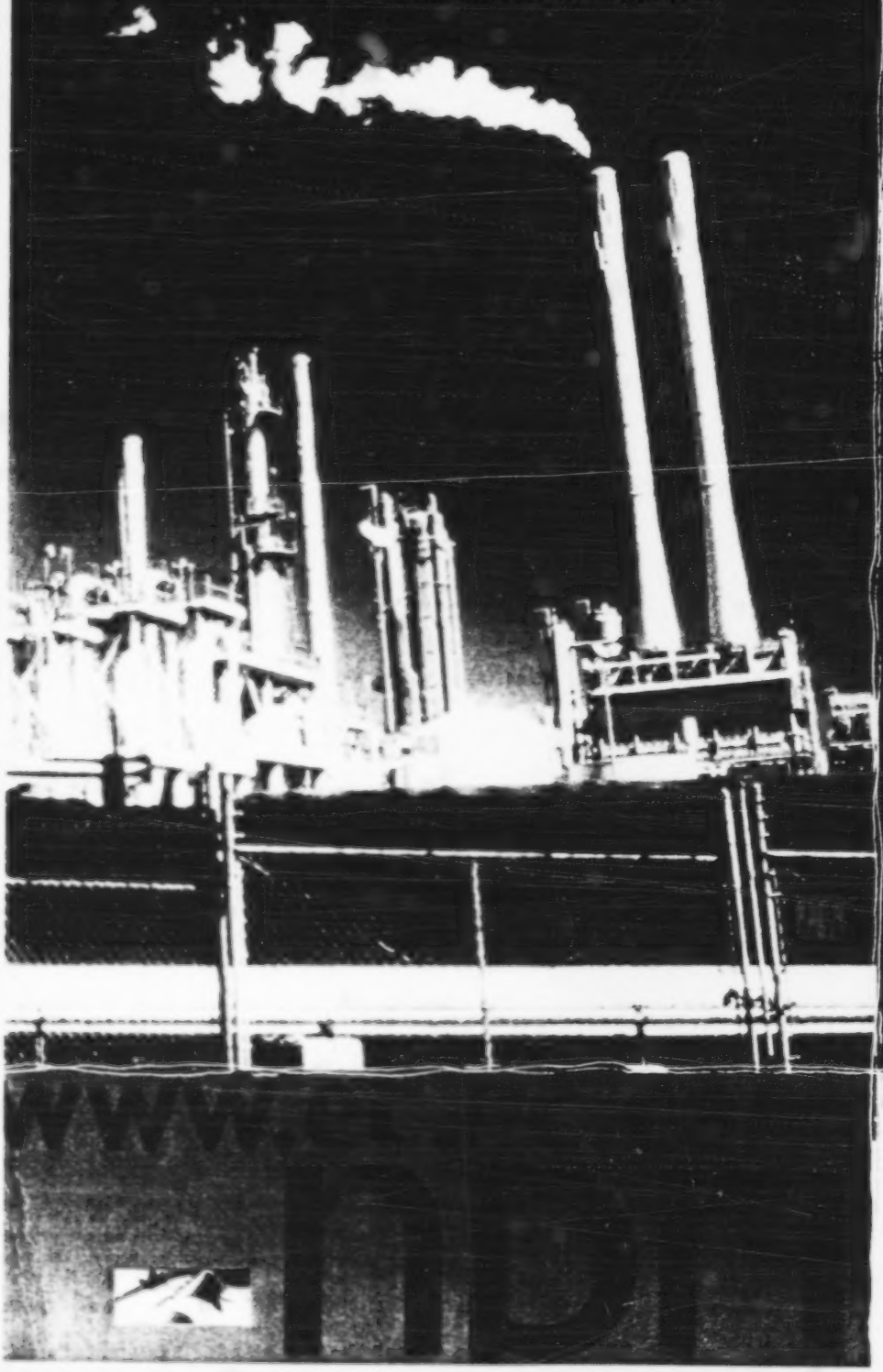
2001 National Overview —

National Pollutant Release Inventory

Canadian Environmental Protection Act, 1999



Reporting Requirements

November 2003

Canada

NATIONAL AND REGIONAL NPRI OFFICES

National Office
National Pollutant Release Inventory
Environment Canada
9th Floor, Place Vincent Massey
351 St. Joseph Blvd.
Gatineau, QC
K1A 0H3
Tel.: (819) 953-1656
Fax: (819) 994-3266
E-mail: NPRI@ec.gc.ca
General Inquiries: 1 800 668-6767

Newfoundland and Labrador, Prince Edward Island, New Brunswick and Nova Scotia
National Pollutant Release Inventory
Environment Canada
16th Floor, Queen Square
45 Alderney Drive
Dartmouth, NS
B2Y 2N6
Tel.: (902) 426-4482 / 426-4805 / 426-5037
Fax: (902) 490-0722
E-mail: NPRI_ATL@ec.gc.ca

Quebec
National Pollutant Release Inventory
Environment Canada
105 McGill Street, 4th Floor
Montréal, QC
H2Y 2E7
Tel.: (514) 283-7303 / 283-0248 / 496-1832
Fax: (514) 496-6982
E-mail: INRP_QC@ec.gc.ca

Ontario
National Pollutant Release Inventory
Environment Canada
4905 Dufferin Street, 2nd Floor
Downsview, ON
M3H 5T4
Tel.: (416) 739-5955
Fax: (416) 739-4326
E-mail: NPRI_ONTARIO@ec.gc.ca

NPRI/Ontario Regulation 127
Joint Technical Assistance Centre
Tel.: (416) 739-4707

Manitoba, Saskatchewan, Alberta, Northwest Territories and Nunavut
National Pollutant Release Inventory
Environment Canada
Twin Atria #2, Room 200
4999-98 Avenue
Edmonton, AB
T6B 2X3
Tel.: (780) 951-8989
Fax: (780) 951-8808 / 495-2615
E-mail: NPRI_PNR@ec.gc.ca

British Columbia and Yukon
National Pollutant Release Inventory
Environment Canada
#201–401 Burrard Street
Vancouver, BC
V6C 3S5
Tel.: (604) 666-3221 / 666-3890 / 666-9864
Fax: (604) 666-6800
E-mail: NPRI_PYR@ec.gc.ca

National Pollutant Release Inventory
Environment Canada
91782 Alaska Highway
Whitehorse, YT
Y1A 5B7
Tel.: (867) 667-3402
Fax: (867) 667-7962
E-mail: NPRI_YK@ec.gc.ca

National Overview —

National Pollutant Release Inventory

Canadian Environmental Protection Act, 1999

Reporting Requirements

ACKNOWLEDGMENTS

Prepared by:
National Pollutant Release Inventory (NPRI), National Office
Information Systems Division, Pollution Data Branch, Environment Canada

In collaboration with NPRI Regional Offices:
Pacific and Yukon Region
Prairie and Northern Region
Ontario Region
Quebec Region
Atlantic Region

National Library of Canada Cataloguing in Publication
National Pollutant Release Inventory (Canada)
2001 National Overview : Reporting Requirements : National Pollutant Release Inventory.

Issued also in French under title: *Compte rendu national de 2001, Exigences de déclaration, Inventaire national des rejets de polluants.*
"*Canadian Environmental Protection Act (1999)*".
ISBN 0-662-35415-X
Cat. no. En49-16/1E

1. National Pollutant Release Inventory (Canada).
2. Pollutants–Reporting–Canada.
I. Canada. Environment Canada.
II. Title.

TD193.N27 2003 363.738'0971 C2003-906859-5

EPS 5/NP/1E
The Chemical Abstracts Service (CAS) Registry Number is the property of the American Chemical Society, and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the government when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

© Her Majesty the Queen in Right of Canada (Environment Canada) 2003

104-04836/

TABLE OF CONTENTS

1 Overview of the NPRI 2
- 1.1 What Is the NPRI? 2
- 1.2 What's New for the 2001 NPRI? 2
  - *1.2.1 NPRI Substance List for 2001* 2
  - *1.2.2 2001 National Overview Series* 3
  - *1.2.3 New Groupings for Releases and Transfers* 3

2 Who Reports to the NPRI? 5
- 2.1 Facility Criteria 5
- 2.2 Employee Criteria 5
- 2.3 Substance Thresholds 5

3 What Is Reported to the NPRI? 8

4 Reporting On-site Releases, Final Disposal Activities, and Off-site Transfers to the NPRI 10
- 4.1 On-site Releases 10
- 4.2 Final Disposal Activities — On Site and Off Site 10
- 4.3 Off-site Transfers for Treatment Prior to Final Disposal 10
- 4.4 Off-site Transfers for Recycling and Energy Recovery 10

5 Reporting Pollution Prevention Activities to the NPRI 11

6 Reporting Confidential Information to the NPRI 11

7 Factors to Consider when Using NPRI Data 12

8 Bibliography 13
- 8.1 Government References 13
- 8.2 Web Site References for Substance Information 13
- 8.3 Additional Sources of Information 14

1 OVERVIEW OF THE NPRI

1.1 What Is the NPRI?

The National Pollutant Release Inventory (NPRI) is a legislated, nationwide, publicly accessible inventory of pollutants released to the environment. It was created in 1992 to provide Canadians with information on pollutant releases from facilities located in their communities, including the quantities discharged to air, water, land, and underground injection and the quantities sent to other facilities for disposal, treatment, or recycling and energy recovery. It also supports a number of environmental initiatives, by providing information that:

- helps governments and others to identify priorities for action;
- encourages industry to take proactive measures to reduce releases;
- allows for tracking of progress in reducing releases; and
- supports a number of regulatory initiatives.

The NPRI is a constantly evolving program. Public and stakeholder consultation is an integral part of the changes to the program. Since the NPRI's inception, substances have been added and deleted, the thresholds at which substances are reported have been adjusted, and the NPRI has expanded in scope to collect data on recycling and pollution prevention activities. Further refinements are planned for future years.

The NPRI program is delivered by Environment Canada under the authority of the *Canadian Environmental Protection Act* (CEPA).[1] Owners or operators of facilities that manufacture, process, or otherwise use one or more of the NPRI-listed substances under prescribed conditions are required to submit an annual report to Environment Canada on the releases and transfers of those substances.[2]

For more information, refer to Environment Canada's NPRI Web site at **www.ec.gc.ca/npri/**, or contact your nearest NPRI office.

1.2 What's New for the 2001 NPRI?

Environment Canada is continually working with stakeholders to review and improve the manner in which pollutant information collected through the NPRI is provided to the public annually. This includes the development of new products and providing more timely information on an annual basis. The following provides highlights of what is new for the 2001 NPRI.

1.2.1 NPRI Substance List for 2001

The NPRI substance list was developed through public consultation and includes substances of health or environmental concern. There were 178 substances on the first NPRI list in 1993.

For the 2001 reporting year, there were 265 substances listed in the NPRI, 74 of which have been declared toxic under CEPA 1999 (refer to Section 4 of *2001 National Overview — Summary of 2001 Data, National Pollutant Release Inventory* for more information on this category of substances).

The original 10-tonne manufacture, process or otherwise use reporting threshold applies to 245 substances. The remaining 20 substances have alternate reporting thresholds (see Section 2.3), because they pose serious risks to human health or the environment in relatively low quantities, and very limited data, if any, would be reported to the NPRI for these substances at the original 10-tonne and 1% concentration reporting threshold.

The following changes were made to the NPRI substance list for the 2001 reporting year:

- addition of N,N-dimethylformamide (CAS No. 68-12-2) to Schedule 1, Part I, of the 2001 *Canada Gazette* notice;
- amalgamation of the individual isomers of cresol (*m*-, *o*-, and *p*-cresol) under the "cresol (all isomers)" listing;
- changed qualifier for vanadium to "(except when in an alloy) and its compounds" from "fume or dust"; and
- de-listing of phosphoric acid (CAS No. 7664-38-2).

---

1 The 1988 CEPA was in force for previous years of NPRI reporting. CEPA 1999 came into force in April 2000 and is the authority for the 2001 reporting year and beyond.

2 The requirements for the 2001 NPRI were published in the *Canada Gazette*, Part I, on December 29, 2001.

The list of NPRI substances for the 2001 reporting year is provided in a supplementary table found on the NPRI Web site at **www.ec.gc.ca/npri/**

1.2.2 2001 National Overview Series

The 2001 National Pollutant Release Inventory (NPRI) National Overview (referred to as the "2001 National Overview") consists of the following series of documents:

- 2001 National Overview — Reporting Requirements, National Pollutant Release Inventory;
- 2001 National Overview — Summary of 2001 Data, National Pollutant Release Inventory;
- 2001 National Overview — Releases, National Pollutant Release Inventory;
- 2001 National Overview — Final Disposal and Off-site Transfers for Treatment Prior to Final Disposal, National Pollutant Release Inventory; and
- 2001 National Overview — Recycling and Energy Recovery, National Pollutant Release Inventory.

The 2001 National Overview was categorized in this manner to provide Canadians with more focused and concise summaries regarding the NPRI reporting requirements, on-site releases of pollutants, final disposal of pollutants and off-site transfer of pollutants for treatment prior to final disposal, and information on recycling and energy recovery in Canada for the 2001 reporting year. The 2001 National Overview series includes data as they appeared in the NPRI database on **November 8, 2002**.

In addition to the 2001 National Overview series, Environment Canada has developed a new report entitled *Informing Canadians on Pollution 2003: Highlights of the 2001 National Pollutant Release Inventory (NPRI)*. This report provides a snapshot of pollution from industrial and commercial companies in Canada in 2001. In addition to marking progress on sector and pollutant releases and disposal and recycling trends, other highlights include special sections on toxic substances, pollution prevention, managing pollution in Canada, and tips on how communities and individuals can use the NPRI.

1.2.3 New Groupings for Releases and Transfers

Environment Canada engaged stakeholders during 2002 to review the "reporting in" and "reporting out" of NPRI information. This review was identified as a priority during the consultation process by the NPRI Multistakeholder Work Group on Substances. In previous reporting years, some stakeholders expressed concerns with the reporting of pollutants sent to a landfill on site as a release to the environment, whereas transfers off site of pollutants for final disposal to a landfill were reported as transfers. This difference in classification could lead to a different representation of the same activity, depending on whether it occurred on site or off site. There is also an issue of perception — sending substances to a landfill is perceived differently from releases to air and water.

Stakeholders have recommended that releases include only releases to air and water and those releases that disperse material on land. Substances sent to landfill or land farm or underground injection on site should be grouped together with transfers off site destined for a similar fate. Other options are possible, but the recommended option has a number of advantages, including the following:

- Similar activities are portrayed in a similar manner, whether they occur on site or off-site.
- It will be easier to track trends in disposal.
- It provides a more intuitive presentation of information.

Through this work with stakeholders, a new format was established for summarizing releases and transfers of NPRI pollutants. The following groupings were used to summarize information collected through the NPRI for the 2001 reporting year:

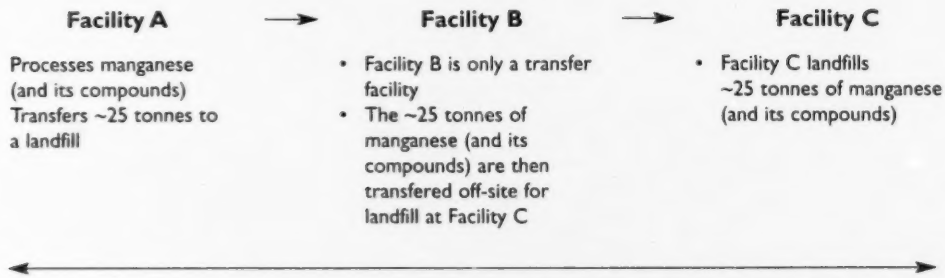
On-site pollutant releases:

- air
- water
- land — includes spills, leaks, and other

Final disposal:

- on-site disposal: landfill, land treatment, and underground injection
- off-site disposal: landfill, land treatment, underground injection, and storage

Figure 1-1 Example of Double Counting


Facility A
Facility B
Facility C
• Processes manganese (and its compounds)
• Transfers ~25 tonnes to a landfill
• Facility B is only a transfer facility
• The ~25 tonnes of manganese (and its compounds) are then transfered off-site for landfill at Facility C
• Facility C landfills ~25 tonnes of manganese (and its compounds)
The total amount of manganese (and its compounds) transferred off-site to a landfill from Facility A to Facility B and then to Facility C was **only 25 tonnes** and not 50 tonnes.

Off-site transfers for treatment prior to final disposal:

- physical treatment
- chemical treatment
- biological treatment
- incineration or thermal treatment where energy is not recovered
- treatment at a municipal sewage treatment plant (MSTP)

Off-site transfers for recycling and energy recovery:

- recycling
- energy recovery

Double counting is an issue that needs to be considered when attempting to add releases and transfers together. It is important to understand that there is no double counting of releases and disposal on site, whereas transfers may be counted more than once. In Figure 1-1, for example, Facility A transfers approximately 25 tonnes of manganese (and its compounds) (deemed to be a waste material by Facility A) to Facility B (a transfer facility). Facility B then transfers the same 25 tonnes of manganese (and its compounds) to Facility C, which proceeds to landfill this material. In addition, Facility A, Facility B, and Facility C file reports to NPRI for the 2001 reporting year. In this example, it is important to note that **only 25 tonnes** (and not 50 tonnes) of manganese (and its compounds) in total are transferred off site from Facility A to Facility B and then to Facility C.

2 WHO REPORTS TO THE NPRI?

In general, any person who owns or operates a facility in Canada was required to report to the NPRI for 2001 if the facility met or exceeded **all** criteria for the type of activity, the number of employees or hours worked, and, in most cases, the amount of NPRI-listed substances manufactured, processed, or otherwise used in specified amounts (referred to as "thresholds").

The criteria presented in the following sections applied to the 2001 reporting year and are summarized in Table 2-1.

2.1 Facility Criteria

A facility, or any part thereof, was required to report to the NPRI if it met the employee criteria and substance thresholds, unless it was used exclusively for one of the following activities:

- education or training of students, such as universities, colleges, and schools;
- research or testing;
- maintenance and repair of transportation vehicles, such as automobiles, trucks, locomotives, ships, or aircraft;
- distribution, storage, or retail sale of fuels;
- wholesale or retail sale of articles or products that contain NPRI-listed substances, provided that the substances are not released to the environment during normal use at the facility;
- retail sale of NPRI-listed substances;
- growing, harvesting, or management of renewable natural resources, such as fisheries, forestry, or agriculture, but not those facilities that process or otherwise use their products;
- mining, but not those facilities engaged in further processing of mined materials;
- drilling or operating wells to obtain oil and gas products, but not those facilities engaged in further processing of these oil and gas products; or
- the practice of dentistry.

2.2 Employee Criteria

A facility was required to report to the NPRI if, during the 2001 calendar year:

- the number of hours worked by all employees totalled 20 000 or more; or
- the facility was used for any of the following activities to which the 20 000-hour employee threshold did not apply:
  - non-hazardous solid waste incineration of 100 tonnes or more of waste per year, including small combustion units, conical burners, and beehive burners;
  - biomedical or hospital waste incineration of 100 tonnes or more of waste per year;
  - hazardous waste incineration;
  - sewage sludge incineration; or
  - wood preservation.

The 20 000-hour employee threshold was removed for facilities used for these activities because, although they were known to release significant quantities of NPRI pollutants to the environment, they may not have been required to report if they did not also meet the 20 000-hour employee threshold.

2.3 Substance Thresholds

For the 2001 reporting year, the NPRI substance list was divided into four parts, each with different reporting thresholds. Table 2-1 provides a comparison of the reporting criteria for substances designated as "Part 1," with the 10-tonne and 1% concentration threshold, and those designated as "Part 2," "Part 3," and "Part 4," which have alternate reporting thresholds. Of the substances with alternate reporting thresholds, only mercury (and its compounds) (Part 2) was previously listed in the NPRI at the original 10-tonne and 1% concentration thresholds.

Table 2-1 Reporting Criteria for the 2001 NPRI

	Part 1	Part 2	Part 3	Part 4
Substances	245 substances	Mercury (and its compounds)	Polycyclic aromatic hydrocarbons (PAHs) — 17 different substances in total	• Hexachlorobenzene (HCB) • Polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (dioxins and furans)
Employee criteria	Employees worked a total of 20 000 hours or more during the year, or the facility was used for certain types of incineration [A] or wood preservation.	Employees worked a total of 20 000 hours or more during the year, or the facility was used for certain types of incineration [A] or wood preservation.	Employees worked a total of 20 000 hours or more during the year, or the facility was used for certain types of incineration [A] or wood preservation.	Employees worked a total of 20 000 hours or more during the year in certain sectors, [C] or the facility was used for certain types of incineration [A] or wood preser tion.
Substance threshold	The substance was manufactured, processed, or otherwise used in a quantity of 10 tonnes or more during the year, and the concentration of the substance was greater than or equal to 1% by weight (except by-products [B]).	Mercury was manufactured, processed, or otherwise used in a quantity of 5 kg or more during the year (at any concentration).	Any individual PAH was incidentally manufactured and released or transferred, together totalling 50 kg or more during the year.	No quantitative threshold — all facilities used or engaged in the identified activities [A, C] that have the potential to incidentally manufacture dioxins/furans or HCB must submit an NPRI report.
Other			Any PAH released or transferred from a wood preservation process using creosote, regardless of the quantity of PAH released or transferred or the numbers of hours worked by employees.	A facility used for wood preservation using pentachloro-phenol must report for dioxins/furans and HCB regardless of the quantities released or transferred or the number of hours worked by employees.

[A] Facilities used for the following incineration activities must report to the NPRI, regardless of the number of employees or hours worked:
- non-hazardous solid waste incineration of 100 tonnes or more of waste per year, including small combustion units, conical burners, and beehive burners;
- biomedical or hospital waste incineration of 100 tonnes or more of waste per year;
- hazardous waste incineration; or
- sewage sludge incineration.

[B] By-products must be included in the calculation of the 10-tonne threshold, even if they are at a concentration of less than 1% by weight.

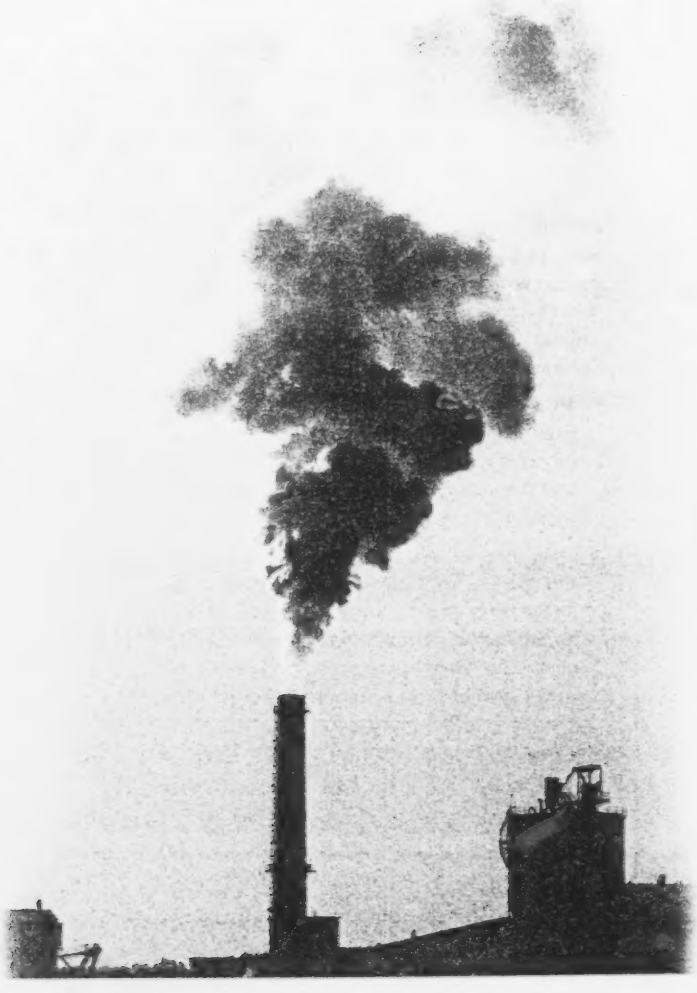
[C] Facilities engaged in the following activities must report releases and transfers of substances listed in Part 4 if they meet the 20 000-hour employee threshold:
(i) non-hazardous solid waste incineration of 100 tonnes or more of waste per year, including small combustion units, conical burners, and beehive burners;
(ii) biomedical or hospital waste incineration of 100 tonnes or more of waste per year;
(iii) hazardous waste incineration;
(iv) sewage sludge incineration;

Table 2-1 Reporting Criteria for the 2001 NPRI (continued)

(v) base metals smelting;
(vi) smelting of secondary aluminum;
(vii) smelting of secondary lead;
(viii) manufacturing of on using a sintering process;
(ix) operation of electric arc furnaces in steel foundries;
(x) operation of electric arc furnaces in steel manufacturing;
(xi) production of magnesium;
(xii) manufacturing of portland cement;
(xiii) production of chlorinated organic solvents or chlorinated monomers;
(xiv) combustion of fossil fuel in a boiler unit with a nameplate capacity of 25 megawatts or greater of electricity, for the purpose of producing steam for the production of electricity, with a generating capacity of 25 megawatts or greater of electricity;
(xv) combustion of hog fuel originating from logs that were transported or stored in salt water in the pulp and paper sector; or
(xvi) combustion of fuel in kraft liquor boilers used in the pulp and paper sector.

The following substances were listed at alternate reporting thresholds:

- 17 individual polycyclic aromatic hydrocarbons (PAHs) — 50 kg of releases and transfers per year;
- polychlorinated dibenzo-p-dioxins (dioxins) / polychlorinated dibenzofurans (furans) — from selected activities, with no quantitative threshold;
- hexachlorobenzene (HCB) — from selected activities, with no quantitative threshold; and
- mercury (and its compounds) — manufacture, process, or otherwise use 5 kg per year.



3 WHAT IS REPORTED TO THE NPRI?

Any facility in Canada meeting the NPRI reporting criteria for the 2001 reporting year was legally required to submit a report to Environment Canada by June 1, 2002. A report includes information specific to the facility, such as identification (name, number of employees, etc.), contact information (address, telephone number, etc.), and industrial classification codes. Reporting for each NPRI substance included an indication of whether the substance was manufactured, processed, or otherwise used and the nature of such activities and uses during the year. Specifically, facilities reported:

- the quantity released on site to air, water, land, and underground injection;
- the quantity transferred off site for disposal, and the nature of treatment, destruction, or containment;
- the quantity transferred off site for recycling, subdivided by recovery of energy and various materials, such as solvents, catalysts, and metals;
- the reasons for changes in reported releases or transfers compared with the previous year; and
- pollution prevention activities.

Facilities were also encouraged to provide additional comments to explain year-to-year changes. Facilities were required to provide information to which they could reasonably be expected to have access. To quantify releases and transfers, a range of methods may be used. Listed in declining order of expected accuracy for most calculations, these include:

- direct measurement or monitoring — an example is the measurement of the volume of gas discharged from an industrial stack and the concentration of a given pollutnt within that stack flow;
- mass balance calculations — knowledge of the quantity of a substance going into an industrial process and what happens to it as part of the process (e.g., consumed, chemically transformed, etc.) to allow a calculation of how much will leave the process and in what form;
- emission factors — published models or equations that predict the amount of pollutant(s) generated as a function of some measurable quantity at the facility (e.g., kilograms of benzene emitted per cubic metre of fuel burned); the factors are typically developed based on actual measurement; and
- engineering estimates — estimation method based on physical and/or chemical properties of substances and process conditions.

Facilities were also required to report their industrial classifications using the North American Industry Classification System (NAICS) and the Standard Industrial Classification (SIC) System. Industrial classifications are a means of identifying different types of businesses and industries. The NPRI has adopted NAICS Canada as the standard for identifying industrial sectors to enable better comparisons of NPRI data with similar inventories in the United States and Mexico. For the 2001 reporting year, the NPRI continued to collect Canadian and American SIC data to retain continuity with historical data. A description of the two systems is given below:

- **North American Industry Classification System (NAICS)**: The NAICS was developed by Statistics Canada, the U.S. Office of Management and Budget, and Mexico's Instituto Nacional de Estadistica Geografia e Informatica, to enable the respective national agencies to collect comparable statistical data. It has replaced the 1980 SIC as the standard for classifying industries by Statistics Canada. Statistics Canada provides complete details of NAICS Canada on its Web site at **www.statcan.ca**
- **Standard Industrial Classification (SIC) Codes**: SIC codes are numerical identifiers for different types of businesses and industries. The first two digits of a four-digit SIC code define a major business sector, while the last two denote a facility's specialty within that sector.

Most facilities reporting to the NPRI use an electronic reporting form. Each year, a guidance document and reporting software are mailed to facilities that reported to the NPRI for the previous year. Other facilities required to report to the NPRI must register at one of the NPRI regional offices to receive a copy of the guidance document and reporting software.

Prior to each NPRI reporting year, notification with respect to the substances, the criteria, and the information to be reported are published in the *Canada Gazette*, Part I. NPRI reports for a given calendar year must be submitted to Environment Canada by June 1 of the subsequent year.

4 REPORTING ON-SITE RELEASES, FINAL DISPOSAL ACTIVITIES, AND OFF-SITE TRANSFERS TO THE NPRI

For the purposes of publicly reporting 2001 NPRI information, the groupings shown in Section 1.2.3 and discussed below were used in the development of the 2001 National Overview series.

4.1 On-site Releases

An on-site release is a discharge of an NPRI-listed pollutant to the environment, within the physical boundaries of the facility. This includes:

- emissions to air — discharges through a stack, vent, or other point release, losses from storage and handling of materials, fugitive emissions, spills and accidental releases, and other non-point releases;
- releases to surface waters — discharges, spills, and leaks, but not including discharges to municipal wastewater treatment plants (which are reported under off-site transfers for treatment); and
- releases to land — spills, leaks, and other.

4.2 Final Disposal Activities — On Site and Off Site

The following activities or operations are included in the category classified as "final disposal" — on site and off site:

- containment — two forms of containment are identified:
  i) landfill; and
  ii) other storage;
- underground injection;
- land treatment — for the purpose of land application or land farming; and
- off-site final disposal for storage.

4.3 Off-site Transfers for Treatment Prior to Final Disposal

A shipment of an NPRI-listed substance may be transferred to an off-site location for treatment prior to final disposal. The treatment processes include:

- physical treatment (e.g., drying, evaporation, encapsulation, or vitrification);
- chemical treatment (e.g., precipitation, stabilization, or neutralization);
- biological treatment (e.g., bio-oxidation);
- incineration or thermal treatment where energy is not recovered; and
- treatment at a municipal sewage treatment plant.

4.4 Off-site Transfers for Recycling and Energy Recovery

A shipment of an NPRI-listed substance may be transferred to an off-site location for recycling and energy recovery. "Recycling" refers to activities that keep a material or a component of the material from becoming a waste destined for final disposal. Nine types of recycling operations are identified:

- recovery of solvents;
- recovery of organic substances (other than solvents);
- recovery of metals and metal compounds;
- recovery of inorganic materials (other than metals);
- recovery of acids and bases;
- recovery of catalysts;
- recovery of pollution abatement residues;
- refining or reuse of used oil; and
- other recovery, reuse, or recycling activities.

An NPRI substance may be sent for energy recovery when the substance or the material containing it has sufficient energy content (BTU value) to allow its use as an alternative to fossil fuels or other forms of energy.

5 REPORTING POLLUTION PREVENTION ACTIVITIES TO THE NPRI

Pollution prevention (P2) is defined in CEPA 1999 as "the use of processes, practices, materials, products, substances or energy that avoid or minimize the creation of pollutants and waste, and reduce the overall risk to the environment or human health." As the cornerstone of CEPA 1999, pollution prevention is identified throughout the Act as the priority approach for the protection of the environment and human health.

Pollution prevention seeks to eliminate the causes of pollution rather than managing it after it has been created. Beginning in 1997, qualitative reporting of P2 activities, through the use of checklists, has been required for listed substances under the NPRI program. This reporting allows facilities to publicly report whether P2 activities are being undertaken throughout their operations. This type of qualitative reporting can be elaborated on by reporting facilities through appropriate comment fields. These fields can be used to indicate the extent to which P2 activities were implemented or the reductions resulting from implementation.

P2 activities may include, but are not limited to, materials or feedstock substitution; product design or reformulation; equipment or process modification; spill and leak prevention; on-site reuse, recovery, or recycling; improved inventory management or purchasing techniques; and good operating practices and training.

The opportunity to institute P2 measures can be identified in broad areas of an industrial operation, including material and resource feedstock, equipment and processes, operational practices, products and non-product outputs, and business management systems. Pollution prevention encourages the kinds of changes that are likely to lead to reductions in emissions, waste, and possible usage. Throughout the 2001 NPRI reporting form, facilities were required to identify a reason for change in their on-site releases, off-site transfers, and off-site recycling relative to the previous year. One of the possible reasons for change in these values is the implementation of P2 measures.

6 REPORTING CONFIDENTIAL INFORMATION TO THE NPRI

Pursuant to sections 51 and 313 of CEPA 1999, any person who provides information in response to an NPRI *Canada Gazette* notice may submit a written request that it be treated as confidential based on the reasons set out in section 52 of CEPA 1999. A request for confidentiality will be denied if the data are already in the public domain.

The NPRI does not use confidential data in any of its public reports. It does, however, report on the number of facilities granted confidentiality status and their overall contribution to releases and transfers. Refer to Section 6 of *2001 National Overview — Summary of 2001 Data, National Pollutant Release Inventory* for more information on confidential information reported to the NPRI for the 2001 reporting year.

7 FACTORS TO CONSIDER WHEN USING NPRI DATA

NPRI data provide publicly available annual records of on-site releases and off-site transfers of listed pollutants from facilities operating in Canada. However, NPRI data represent only a portion of all chemical releases and transfers to the Canadian environment. Other substances, such as greenhouse gases (e.g., carbon dioxide and methane), many pesticides, and other pollutants, are not part of the current list of NPRI substances and may be reported to other inventories or managed under other programs.

While the NPRI program currently collects pollutant release and transfer data from a broad range of industrial and non-industrial sectors, not all sources are captured by the NPRI. For example, industrial and stationary fuel combustion sources and mobile sources (e.g., automobiles and trucks) are known to be major contributors of hazardous air pollutants (e.g., benzene and 1,3-butadiene, both of which are CEPA-toxic pollutants). Long-range transboundary air pollution from other countries may be a contributor of persistent organic pollutants and heavy metals, such as cadmium and mercury.

Facilities that do not meet the reporting thresholds because of their size (either the number of employees or the quantity of substances used), such as dry cleaners, or because they are exempt, such as gas stations, do not report to the NPRI. Collectively, however, releases from these sources may account for the majority of releases of some pollutants.

Releases of a particular pollutant by a facility reporting to the NPRI should be considered in the overall context of these other pollutants, other sources, and smaller-sized facilities.

As noted above in Section 1.2.3, the issue of double counting of pollutant estimates should be considered and factored consistently when using NPRI information. More specifically, double counting should be carefully considered when reviewing both on-site and off-site final disposal activities.

Several factors must be considered before drawing conclusions on the environmental performance of specific facilities or industrial sectors. In examining the amount of total releases of any one sector or changes in releases by a facility from previous years, consideration should be given to the fact that the NPRI list of substances and reporting criteria may change from year to year. In addition, it is important to consider more than just the magnitude of releases. The amounts released relative to the size of the facility or sector should be considered, as well as the complexity of the process and the best-available technologies. It would be incorrect to assume that facilities or industrial sectors with the largest releases or transfers are less inclined than others towards pollution prevention and control.

Risk to human health and the environment from on-site releases of pollutants cannot be determined from NPRI data alone. Although the data are useful as a starting point in identifying potential risks, other information is required before such assessments can be made. Risk depends on many factors, such as the specific properties or characteristics of the pollutant, the extent of the exposure, the type of release or transfer, and the environmental medium to which the pollutant is released. The amount of releases of some pollutants may not necessarily be commensurate with their environmental or health impacts. Conversely, smaller releases of specific pollutants may have significant impacts.

Additional sources of information are listed in Section 8 of this document.

8 BIBLIOGRAPHY

8.1 Government References

Environment Canada. *Guide for Reporting to the National Pollutant Release Inventory — 2000*. Minister of Public Works and Government Services Canada, Ottawa, 2000.

Environment Canada. *National Pollutant Release Inventory — National Overview 1999*. Minister of Public Works and Government Services Canada, Ottawa, 2000.

Environment Canada. *Notice with Respect to Substances in the National Pollutant Release Inventory for 2000*. Extract, *Canada Gazette*, Part I, December 25, 1999.

Environment Canada. *Notice with Respect to Substances in the National Pollutant Release Inventory for 2000 — Amendment*. Extract, *Canada Gazette*, Part I , December 23, 2000.

Environment Canada. *Supplementary Guide for Reporting to the National Pollutant Release Inventory — Alternate Thresholds — 2000*. Minister of Public Works and Government Services Canada, Ottawa, 2000.

Government of Canada. *Canadian Environmental Protection Act, 1999*. Statutes of Canada 1999. Chapter 33. Act assented to 14 September 1999.

Statistics Canada. *North American Industry Classification System (NAICS) Canada Manual — 1997*. Catalogue 12-501-XPE, Ottawa, 1998.

Statistics Canada. *Standard Industrial Classification — 1980*. Catalogue 12-501E, Standards Division, Ottawa, 1989.

8.2 Web Site References for Substance Information

A. Environment Canada

- The Green Lane: **www.ec.gc.ca/envhome.html**
- National Pollutant Release Inventory On-line Data Search: **www.ec.gc.ca/npri/**
- CEPA Environmental Registry: **www.ec.gc.ca/CEPARegistry/**
- New and Existing Substances: **www.ec.gc.ca/substances/**
- List of Toxic Substances (Schedule I of CEPA 1999): **www.ec.gc.ca/CEPARegistry/subs_list/Toxicupdate.cfm**

B. Health Canada

- Existing Substances Division: **www.hc-sc.gc.ca/hecs-sesc/exsd/index.htm**

C. International Links

- Agency for Toxic Substances and Disease Registry (ATSDR): **www.atsdr.cdc.gov/**
- Chemfinder: **chemfinder.cambridgesoft.com/**
- Environmental Defense Scorecard: **www.scorecard.org/**
- International Agency for Research on Cancer (IARC): **www.iarc.fr/**
- International Programme on Chemical Safety (IPCS): **www.inchem.org/**
- National Toxicology Program (NTP): **ntp-server.niehs.nih.gov/**
- Organisation for Economic Co-operation and Development (OECD): **www.oecd.org/home/**
- United Nations Environment Programme (UNEP): **www.unep.org/**
- World Health Organization: **www.who.int/dsa/cat97/zehc2.html**

8.3 Additional Sources of Information

Agency for Toxic Substances and Disease Registry
(ATSDR)
1600 Clifton Road (E29)
Atlanta, GA 30333
U.S.A.
Tel.: (404) 639-6300
Fax: (404) 639-6315
Web site: **www.atsdr.cdc.gov/**

Canadian Centre for Occupational Health and Safety
Chemical Evaluation Search and Retrieval System
(CESARS)
250 Main Street East
Hamilton, ON
L8N 1H6
Tel.: (905) 570-8094
Fax: (905) 572-2206
Web site:
www.ccohs.ca/products/databases/cesars.html

Commission for Environmental Cooperation (CEC)
393 St. Jacques Street West
Suite 200
Montréal, QC
H2Y 1N9
Tel.: (514) 350-4300
Fax: (514) 350-4314
Web site: **www.cec.org**

Health Canada
Publishing Coordinator
Environmental Health Centre
Tunney's Pasture 0801B3
Ottawa, ON
K1A 0L2
Tel.: (613) 957-3143
Fax: (613) 941-8632
Web site: **www.hc-sc.gc.ca**

International Agency for Research on Cancer (IARC)
150 cours Albert Thomas
F-69372 Lyon cedex 08
France
Tel.: +33 (0)4 72 73 84 85
Fax: +33 (0)4 72 73 85 75
Web site: **www.iarc.fr/**

National Library of Medicine (TOXNET)
8600 Rockville Park, Bldg. 38A
Bethesda, MD 20894
U.S.A.
Tel.: (301) 496-6531
Fax: (301) 480-3537
Web site: **www.nlm.nih.gov/hinfo.html**

The printing processes used in producing this document conform to environmental performance standards established by the Government of Canada under Canada's *National Guidelines on Lithographic Printing Services*. These standards aim to ensure the environmental integrity of printing processes through reductions in toxic emissions to the environment, reductions in loading of wastewater, reductions in the quantity of material sent to landfills, and the implementation of resource conservation procedures.

The paper used in the interior of this document conforms to *Canada's National Printing and Writing Paper Guideline* and/or *Uncoated Mechanical Printing Paper Guideline*. These guidelines set environmental performance standards for fibre-use efficiency, chemical oxygen demand, energy use, global warming potential, acidification potential, and solid waste.

The printing processes and the paper used in the interior of this document are fully certified under Canada's sole ecolabelling program – the **Environmental Choice™ Program** (ECP). The Program's official symbol of certification – the **EcoLogo™** – features three stylized doves intertwined to form a maple leaf, representing consumers, industry and government working together to improve Canada's environment.

For more information about the **Environmental Choice™ Program**, please visit the ECP website at **www.environmentalchoice.com** or telephone (613) 247-1900.

Environment Canada's Technology Outreach Section is proud to support environmental and quality performance standards, and the use of **Environmental Choice™** certified papers and environmentally responsible products and printing processes, throughout its development and distribution of information products. To obtain a copy of the catalogue *Environment Canada: Selected Publications and Websites*, please contact us toll-free at 1 800 734-3232, or (819) 953-5750; by facsimile at (819) 994-5629; or by e-mail at **epspubs@ec.gc.ca**. For additional information on Environment Canada, visit the departmental website at **www.ec.gc.ca**.

National Pollutant Release Inventory

Canadian Environmental Protection Act, 1999